

# **A REGIONAL APPROACH TO PHASE II PERMITTING ENCOURAGES COOPERATION AND REDUCES COST**

Steve McKinley, PE  
Water Resources Program Manager FMSM Engineers

John F. Damico, MBA President  
Environmental Rate Consultants, Inc.

Patrick T. Karney, PE, DEE Director  
Metropolitan Sewer District of Greater Cincinnati

## **Abstract**

The communities in Hamilton County, Ohio are working together to integrate the EPA Phase II Storm Water Permit by developing a financial plan and a legal organization (Ohio Revised Code [ORC] 6117) to manage storm water on a regional basis. This approach will lead to an efficient and effective permit process; encourage regional cooperation; and lower costs through the economies of scale. In many cases communities are not able to afford the additional financial burden of the permit nor do they have the resources to perform the requirements of the storm water permits. The villages and small townships have expressed that they do not have the resources to develop and implement the permit requirements. If there is no regional authority many of these small communities will be in violation of the NPDES Phase II Storm Water Regulations.

This paper will describe a successful consensus building process used by a number of diverse municipalities working together to address and develop solutions to the water resource problems. They are not alone; hundreds of communities throughout Ohio and the United States are struggling to deal with these very same problems. This has been a complex effort of more than a year of data gathering, consensus building, policy development and regional decision making. There is too much data and information to describe all of the tasks and events that have taken place in this effort. Therefore we will focus on the process used to achieve regional cooperation and how it effected the NPDES Phase II Permit development. We will also look at how regional groups working together can use economies of scale and provide a cost savings to many communities in the region.

## **Introduction**

Hamilton County is located in southwestern Ohio and consists of 49 communities including the City of Cincinnati (also a Phase II community). Its suburbs, townships, and villages are all contained within three major watersheds: the Great Miami, Little Miami, & Mill Creek. All but one community (a small township) must comply with the Phase II Storm Water Regulations.

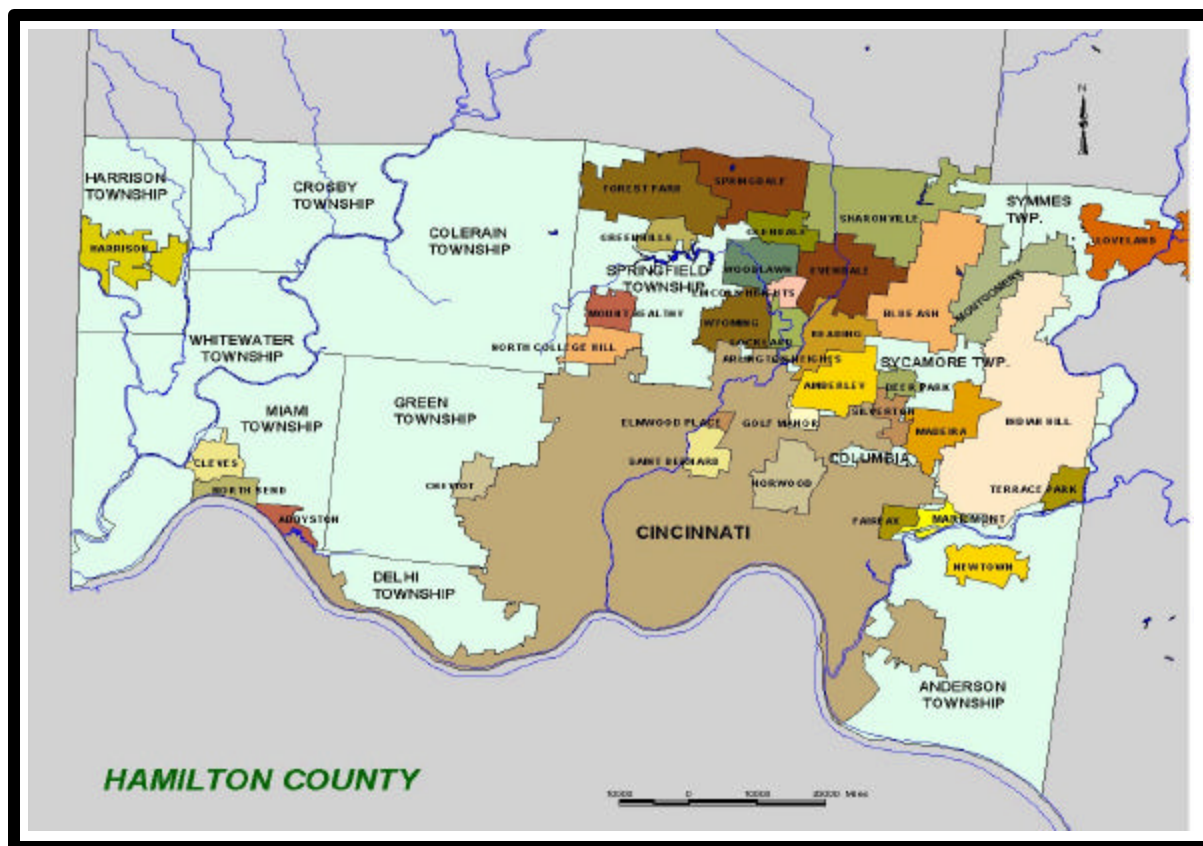
This paper will describe the following.

- Creation of a legal organization within the guidelines of an ORC 6117 to guide the Hamilton County Regional Program.
- The financial aspects of funding such an organization.

- Economy of scale cost savings as a result of joining a regional organization and participating in a regional NPDES Phase II Permit.

## More Than a Queen City

The City of Cincinnati has traditionally been referred to as the Queen City, a truly midwestern city located in southwest Ohio. But while this is the way this area is known, there is much more to southwest Ohio than just the City of Cincinnati. There is Hamilton County, home to a population of more than 845,000 people. Hamilton County is situated in the extreme southwestern corner of the State of Ohio and covers an area of 414 square miles. Within the County are 49 municipalities, including 21 cities, 16 villages and 12 townships. Hamilton County is the third largest in the State in terms of population.



**Figure No. 1. Hamilton County Map of Municipalities Including Cities, Villages and Townships**

Three major watersheds that encompass rural, suburban, and intense urban land uses cover the County. These include the Little Miami River Watershed, Great Miami River Watershed, and the Mill Creek Watershed. The Mill Creek Watershed is the smallest of the three watersheds and, except for a small area in neighboring Butler County, is entirely contained within Hamilton County. Its drainage area contains the most intense urban development (Hedeen, S., 1994. *The Mill Creek – An Unnatural History of an Urban Stream*).

Most of the urban and suburban communities are located in this watershed along with the area's industrial complex. There are also more than 160 combined sewer overflows (CSO's) in this watershed. Because of

the complexity of these problems the Rivers Unlimited Mill Creek Restoration Project (RUMCRP) and the Mill Creek Watershed Council were formed to educate and address the water quality concerns of Mill Creek. Both groups have been a part of the Steering Committee and have provided great contributions to this process.

Each of the communities is important because they represent the growth and the vitality taking place in the Cincinnati Metropolitan area. They also contribute to the problems of flooding and water pollution. While this alone should be the reason for cooperation, EPA has provided another reason for communities to work together through the NPDES Phase II Storm Water Permit.

## **The Storm Water Study**

The Hamilton County Storm Water Study was initiated by the Board of County Commissioners (through the Metropolitan Sewer District of Greater Cincinnati) to address storm water quantity (flooding) and quality (Phase II NPDES) concerns. The specific purpose of this "Study" is to assist local governments throughout Hamilton County, either individually or collectively, to address both the storm water quantity and the NPDES Phase II water quality permit issues and regulations. These USEPA storm water regulations will require all but one of the Hamilton County governments to obtain an NPDES Phase II permit by March 10, 2003. These permits require that each local government develop a Storm Water Management Plan (SWMP) to address six (6) minimum control measures. Implementation of these minimum control measures is intended to improve the quality of the region's rivers and streams.

Today, one of the most serious problems facing Hamilton County elected officials is storm water management (Mill Creek Watershed Council, Summer 2002. "Voice of the Mill Creek"). Every local government in Hamilton County has experienced varying degrees of storm water problems such as street and basement flooding, street closures, stream bank erosion, clogged storm drains, sewer backups and unmaintained detention basins, to name a few. Less frequent, but in many cases more severe, are extreme rainfall events that wash out roads, flood homes and businesses, and in some cases result in injury or death.



**Rescue workers along Sycamore Creek  
July 18, 2001**



**Erosion Damage along Polk Run  
from storm of July 17— 18, 2001**

Now, all of the Hamilton County elected officials must address the requirements of the unfunded USEPA NPDES Phase II Storm Water Permit Program. The NPDES Phase II Storm Water Permit Program will require most local governments to take action to improve water quality in rivers and streams in their areas. Communities will also be required to reduce the pollution load coming from their storm sewers and drainage ditches.

In July 2001, as a result of the torrential rainfall and ensuing devastating flood, the Storm Water Study shifted its primary focus from establishing a regional Phase II permit application to include a means of addressing some of the regional flooding and erosion control problems identified after that flood (Mill Creek Watershed Council, Spring 2002. "Voice of the Mill Creek"). During the course of this Study, nearly 500 "Areas of Concerns" were identified. These "Areas of Concern" included flooding problems, erosion problems, drainage problems and water quality problems. Additionally, The Hamilton County Department of Public Works identified over 2,900 buildings that were located in floodplain areas, within the unincorporated area of the County. A very preliminary estimate of the potential capital requirements would exceed \$500 million, including:

- \$250 million for capital projects to address the local government's "Areas of Concern".
- \$50 million as the local share of the potential costs to remove or mitigate structures in the 100-year floodplain.
- \$200 million as the local cost for the flood control component of the Mill Creek Tunnel Project.

As a result of these mandated water quality regulations and on-going water quantity problems, the Hamilton County Board of County Commissioners have begun to "encourage regional cooperation" by initiating a regional watershed based approach that will formulate and develop solutions for solving these problems. In order to address these complex issues and begin the process of solving the water resource problems in Hamilton County, a plan for regional cooperation was developed that included all of the communities. The plan involved a series of community interactions that educate, inform, and provide a forum for interaction

and consensus building. The plan also involved the formulation of a mission and series of goals that serve as a foundation for regional cooperation.

## **Encourage Regional Cooperation**

A kick-off meeting for the study was held on March 29, 2001. A Steering Committee was established with representatives from County Departments, Local Governments, Regional Agencies and area Universities. The Steering Committee has met monthly since April 2001, with an average of 40 to 45 people attending each meeting. The purpose of this Steering Committee was to develop issues and policies for the Executive Committee and to be a technical advisor to the Consulting Team. The Executive Committee was a small group of elected officials that crafted the regional organization and set policy. The Consulting Team developed and presented a series of "Issue Papers" to assist the Steering Committee in evaluating alternatives and developing solutions to the quality and quantity problems facing the region.

There are many elements that go into the encouragement and development of regional cooperation. For this project, a combination of planned and unexpected elements has come together to build the success we have enjoyed to this point. The following discussion is a brief summary of the following critical success elements:

- Planned Interactions
- Champions
- Mission and Goals
- Building Consensus

### ***Planned Interactions***

It was clear from the very beginning that good community relationships and trust would be needed to develop regional cooperation. To accomplish this trust and relationship, four distinct types of community interaction were planned to get as much interaction with community staff, management, and elected officials as possible. These four types of interaction are as follows:

- Individual Interviews with Local Governments
- Steering Committee
- Executive Committee
- Regional Workshops

### **Individual Interviews with Local Governments**

The Project Team met individually with each local government (a total of more than 50 meetings) throughout Hamilton County. The purpose of these face-to-face meetings was two-fold. The first goal was

to determine a current level of service for storm water in the regional service area. The Level of Service are those activities and functions that a community performs to address the storm water issues in a community. For this study, the Level of Service for storm water includes the Administrative, Engineering & Technical, Environmental & Regulatory, Operation & Maintenance, and Capital Improvement functions that support a community's storm water management. We accomplished this in Hamilton County by identifying each local government's problem areas (Areas of Concern) and obtaining copies of any existing ordinances, regulations, and other pertinent information. Secondly, these meetings provided the Project Team with an opportunity to begin building a relationship with communities located throughout the County, and to convey the process and purpose of the project. This also helped the Project Team to provide each community with a consistent message concerning impending NPDES Phase II Permit Program. Each community was invited to participate in the Steering Committee process that will build relationships and trust throughout the region, and most importantly provide a means for making decisions about how the County will address the NPDES Phase II Permit Program.

### **Steering Committee**

The Steering Committee consisted of a wide range of financial and non-financial stakeholder groups including: community staff and management, several elected officials, county department representatives, watershed and environmental groups, university representatives and others. The Steering Committee has met each month since April 2001. All communities were invited to participate in the Steering Committee process but not all of the communities attended the meetings. There has been a regular attendance of 40 to 45 at each of the monthly meetings. The purpose of this group was to discuss the details of each of the issues of regional cooperation, continue the consensus building process started during the individual face-to-face local meetings, and to conclude with recommendations that would be carried forward to the Executive Committee comprised of elected officials. Issues such as the following were addressed by the Steering Committee:

- Is there a need for a regional group?
- What is an NPDES Phase II Permit?
- What legal authority is available to form a regional district?
- What is the level of service?
- How much will a regional district cost?



## **Storm Water Study Steering Committee**

### **Executive Committee**

The Executive Committee is a much smaller group of 10 members comprised of elected officials from selected communities, the Township Trustees Association, the Municipal League, the Board of County Commissioners, and the Metropolitan Sewer District of Greater Cincinnati. The purpose of the Executive Committee is to consider the recommendations from the Steering Committee, create a legal organization that will encourage regional cooperation, finalize and establish policy, define the storm water level of service, and set rates and charges. The Executive Committee will make final decisions based on local ratepayer interests.

### **Regional Workshops**

Regional Workshops are an attempt to bring together as many of the community leaders (elected officials) as possible to build consensus for the policies developed in by the Steering Committee and by the Executive Committee. Thus far, only one workshop has been conducted. It was an important workshop because it fueled the consensus to develop a small regional district to address the NPDES Phase II Permit.

### ***Champions***

Regional cooperation cannot occur without leadership. The Hamilton County Regional Storm Water Program is no exception to that rule. The success that we have experienced to date has come largely from the leadership of a group of concerned and passionate people. There are a number of people who could be singled out from the Steering Committee and Executive Committee, and there are also those who have paved the way (i.e., the City of Cincinnati Storm Water Utility, the City of Forest Park Storm Water Utility, and the Mill Creek Watershed Council) for this project. There are however, those whose exceptional leadership grants them the title of “Champion.” Hamilton County Commissioner John Dowlin; Mr. Pat

Karney, Director of the Metropolitan Sewer District of Greater Cincinnati; and Mr. Bill Brashaw, County Engineer for Hamilton County, Ohio; have given their time, talent, and passion without reservation to the pursuit of regional cooperation. Without their influence and support there would be no regional project. A Champion is not created or named as a part of some defined process; they arise as a result of the understanding of the vision and the sense of mission that can be accomplished by an effort. The Champions in Hamilton County saw the vision of a regional district and responded with passion to provide the leadership necessary to develop the Hamilton County Regional Storm Water Program.

## ***Mission and Goals***

Every successful endeavor must be planned with an understanding of the direction and destination of the effort. In our initial meetings with the Steering Committee, a mission statement along with a series of goals was developed to establish a foundation and guide for our entire process. The mission statement and goals developed by the Steering Committee are listed below.

### **Mission Statement**

Determine the most effective organizational / management / legal structure available in the State of Ohio, to position Hamilton County and the local governments within the County, to address the NPDES Phase II Storm Water permit regulations, and efficiently and effectively manage storm water on a watershed basis.

### **Goals**

#### ***Water Quality***

Develop a water quality program that will initially meet the requirements of the EPA NPDES Phase II Storm Water Program and over the first five years of the program assist communities to move to comprehensive water quality improvements throughout the district boundary.

#### ***Water Quantity***

Develop a water program that will initially complement the EPA NPDES Phase II Storm Water Permit requirements and over the first five years of the program move to a comprehensive floodplain and drainage program.

#### ***Institutional / Organization***

Create a legal organization to manage storm water on a regional basis utilizing Ohio Revised Code 6117 or Ohio Revised Code 6119.

#### ***Environmental***

Develop an environmental program that meets the requirements of the EPA NPDES Phase II Storm Water Program and over the first five years of the program move to a comprehensive environmental program that recognizes storm water as a valued community natural resource that needs to be preserved and protected.

## ***Finance***

Establish a district-wide dedicated source of funding that supports the institutional goals of the program, is fair and equitable, and creates both a short-term and long-term rate structure.

## ***Public Involvement / Education***

Create a Public Involvement / Education program that meets the requirements of the EPA NPDES Phase II Storm Water Program and over the first five years of the program move to a comprehensive Public Involvement / Education that includes all stakeholders and takes a watershed approach to help citizens preserve and protect the environment.

## ***Watershed***

Implement a watershed approach throughout the district boundaries. (Note that the district boundary is Hamilton County, Ohio, but there are portions of three watersheds within Hamilton County and the communities want to take a "Watershed Approach" to the management of the district).

## ***Building Consensus***

Building and achieving consensus with a large group was a real challenge. Some of these challenges included: keeping the members' interests high, to motivate them to return to future meetings, to achieve consensus, to communicate complex issues at a level that everyone comprehends, and to address personal and political agendas. Techniques that were implemented and used for this process are as follows:

- Define Consensus – The group ultimately defined consensus as – "I can accept and live with this action or solution." This definition does not necessarily provide the optimum solution for all members but does provide a solution that everyone can live with as a region.
- Mission and Goals – We referred back to this foundational building block many times throughout the process, which kept us on track and on target with our overall agenda.
- Agendas – An agenda was sent out before every meeting so everyone could attend the meeting and have meaningful input in the process and topic of the day. We also sent meeting summaries to each community after each meeting.
- Issue Papers – Key issues, policies, and topics were written in a "white paper" format called issue papers. This contained important research, history, or regulatory information as well as alternatives and recommendations.
- E-Mail & Internet – Communication with this many people is critical. We were able to use e-mail (almost everyone had e-mail and internet access) for day-to-day communication and a project web site was created on the Metropolitan Sewer District's Internet site. All of the presentations, issue papers, agendas, meeting summaries and maps were placed on this web page.
- Variety of Materials and Presentation Methods – There was an attempt to make every meeting interesting and informative by using a diversity of materials and techniques to present the meeting

material. PowerPoint, presentation boards, Arc-View GIS demos and facilitated interaction were all used in the meetings. In one of the meetings a written survey was used to gather information and opinion.

- Sergeant-at-Arms was selected from among the Steering Committee to keep order and focus.

## **Efficient and Effective Permit Process**

Today, there is a new emphasis on dealing with storm water quality. Since enactment of the Clean Water Act by Congress in 1972, local governments and industries in Ohio have spent hundreds of millions of dollars to upgrade, expand or rebuild their wastewater treatment plants. The net result of this massive capital program has been significantly improved effluents from wastewater plants with corresponding improvements in the quality of receiving streams. As these treatment plants have improved however, it has become apparent that there are other sources of pollutants to our rivers and streams that are adversely affecting their quality and impacting aquatic life. These sources include agricultural runoff (fertilizers, pesticides), hydro modification (channelization, stream maintenance), mining, urban runoff, land disposal, construction site runoff and failing septic systems.

To address these sources of pollution, USEPA initiated the National Pollution Discharge Elimination System (NPDES) storm water programs. The Phase I program required that major cities with populations greater than 100,000, which had separate storm sewer systems (does not include combined sanitary sewer and/or sanitary sewer systems) must obtain a permit from Ohio EPA by May 1993. In Ohio, only Columbus, Akron, Dayton and Toledo were required to obtain a Phase I permit. The other major cities meeting the population criteria were excluded from these regulations and fall under separate but related combined sewer system regulations.

On December 8, 1999 USEPA adopted regulations that will require many of the remaining cities, villages, urban townships and counties to obtain NPDES Phase II storm water permits. Currently Ohio EPA estimates over 480 local governments across Ohio will be required to obtain a Phase II storm water permit. All affected entities must obtain permit coverage by March 10, 2003. These local governments will be required to develop a storm water management program (the permit is a storm water quality plan for the community) that implements six minimum control measures. The following is a brief description of the Six Minimum Control Measures.

### ***Six Minimum Control Measures***

#### **1. Public Education and Outreach**

Distributing educational materials and performing outreach to inform citizens about the impacts polluted storm water runoff discharges can have on water quality.

#### **2. Public Involvement / Participation**

Providing opportunities for citizens to participate in program development and implementation, including effectively publicizing public hearings and/or encouraging citizen representatives on a storm water management panel.

### **3. Illicit Discharge Detection and Elimination**

Developing and implementing a plan to detect and eliminate illicit discharges to the storm sewer system (includes developing a storm water system map and informing the community about the hazards associated with illegal discharges and improper disposal of wastes).

### **4. Construction Site Runoff**

Developing, implementing and enforcing an erosion and sediment control program for construction activities that disturb one or more acres of land.

### **5. Post-Construction Management**

Develop, implement and enforce a program to address the discharges of post construction storm water runoff from new development. Controls could include protection of sensitive areas (wetlands), or the use of structural Best Management Practices (BMP's).

### **6. Pollution Prevention /Good House Keeping**

Develop and implement a program to prevent or reduce pollutant runoff from municipal operations. The program must include municipal staff training on pollution prevention measures and techniques (e.g., regular street sweeping, reduction in the use of pesticides or street salt, or frequent catch basin cleaning).

## ***Hamilton County Phase II Storm Water Permit***

Hamilton County, Ohio is addressing the EPA Phase II Storm Water Permit as a regional multi-community permit. This means that each community will be a co-permittee to a regional permit that is submitted by the ORC 6117 Regional Sewer District. This Regional Sewer District will perform the "regional tasks" as defined by the permit. The local communities will perform the "local tasks" as defined by the permit. The District will also monitor, develop, and submit the permit document as well as the required annual reports. A copy of one of the interim permit implementation plans is a separate document attached to the end of this paper.

The first part of the study included the development of the permit through the facilitated Steering Committee process. Various permit tasks and levels of service were reviewed by the Steering Committee and a draft permit implementation plan was crafted by the Steering Committee.

The second part of the Study involved the preparation of many of the items required under EPA's Six Minimum Control Measures. Items such as brochures, ordinances, and manuals are being developed in draft form. The District will implement these items. However, the individual communities that participated in the development process can use these materials even if they do not join the District. The products that are being developed are shown in the table below:

**Table No. 1. NPDES Phase II Storm Water Permit Products for the Hamilton County Storm Water Study**

<b>1. Public Education</b> <ul style="list-style-type: none"><li>• Brochures &amp; Fact Sheets</li><li>• PowerPoint Slide Presentation</li><li>• Library of Materials</li><li>• Educational Programs</li><li>• Press Information</li></ul>	<b>4. Construction Site Runoff</b> <ul style="list-style-type: none"><li>• Erosion &amp; Sediment Control Ordinance</li><li>• Enforcement Plan</li><li>• Site Review Procedures</li><li>• Proposed Sanctions</li></ul>
<b>2. Public Participation</b> <ul style="list-style-type: none"><li>• Speakers Materials</li><li>• Citizen Watch Group</li><li>• Information Council</li><li>• Hotline</li></ul>	<b>5. Post Construction/Runoff Control</b> <ul style="list-style-type: none"><li>• Model Storm Water Ordinance</li><li>• Draft BMP Manual</li><li>• Inspection Program</li></ul>
<b>3. Illicit Discharge Detection &amp; Elimination</b> <ul style="list-style-type: none"><li>• System Map</li><li>• Illicit Discharge Ordinance</li><li>• Detection Plan</li></ul>	<b>6. Pollution Prevention / Good Housekeeping</b> <ul style="list-style-type: none"><li>• Model Management Plan</li><li>• Facility Management Plan</li></ul>

## Funding Legal Organizations

As previously discussed, Hamilton County will use a regional organization to cooperate in the development of a regional NPDES Phase II Storm Water Permit and reduce the cost of development and implementation to the communities. In order for this to be accomplished a legal framework must be available to create the regional district. Two years ago the Ohio State Legislature crafted and passed House Bill 549 that modified ORC 6117 to include Storm Water (along with Water and Sanitary Sewer) and to allow for the collection of fees and charges to operate and maintain the storm water system. This is important because it allows counties in the State of Ohio and all of the communities within the counties to form a regional district that can assess and collect fees and charges to manage storm water similar to an incorporated city.

The Steering Committee made the decision to designate ORC 6117 "County Sewer District" to be the most appropriate legal management structure to address regional storm water management issues throughout Hamilton County. Once this decision was made, the process of selecting the appropriate size and scope of a regional storm water organization was considered.

This process was accomplished by reviewing four "example" programs with different levels of service and the related level of responsibilities for a given cost of service that the new organization would provide. For example, the *"small" regional storm water organization* will only address the NPDES Phase II permit requirements for each of the member communities. No other storm water services will be performed by the small organization. Each local jurisdiction will remain in complete control of managing their respective storm water programs including water quantity. They would also be responsible for local aspects of the Phase II permit such as construction site sediment control, street sweeping, etc.

The *"medium" regional storm water organization* will address the NPDES Phase II permit requirements for each of the member communities (the small organization service level) as described above, as well as a capital improvement program that will address flooding and drainage issues on a regional watershed basis. Staff will coordinate the planning, design, and management of regional capital projects. Capital projects would only be constructed for regional areas of concern. The district will not perform maintenance. The capital program will be designed to address flooding concerns.

The "*large/comprehensive*" storm water program is an all-inclusive regional and local water quality, water quantity, and floodplain management organization. This metropolitan storm water district would operate, maintain, provide capital construction, and regulate all storm water activities for the district service area. For the most part member communities would give up control of storm water activities. *It should be noted that the limits of local control would be based on the terms of the district's plan of operation and/or agreement with local communities.* The district would perform all planning, design, construction management, plan review, administration, customer service, and billing services.

The program examples met the mission and goals developed by the Steering Committee. Even the low level of service will meet the initial goals of the program. For example, the low level of service option will develop the NPDES Permit and Implementation Plan for the regional district. No other storm water activities will be performed as a part of this level of service. While this "low-end" program meets the mission and goals established by the Steering Committee the extended time-dependent (5-years) portion of the goals are not addressed by this level of service. This does not mean that this level of service will not accomplish the program mission and goals; however, it does mean that the program will be limited to a minimal level of service for a reasonable cost of service.

After careful consideration by the Steering Committee, consensus was achieved and a decision was made to create a small organization with the purpose of administering and coordinating the regional permit and will perform all roles responsibilities and activities associated with the NPDES Phase II program as will be organized as follows:

- Five employees (senior engineer, planner, engineer, GIS specialist and public information specialist)
- Overhead charge of \$12,000 annually
- A 6.2% administrative overhead charge to the County's general fund
- Mapping performed by District in the amount of \$600,000 annually
- At the end of the first five-year permit term, additional staff would be hired for erosion and sediment control and illicit discharge enforcement
- Inflationary cost factors of 2.75% for salaries and 2.90% for benefits
- Other expense cost escalation factors (3%)
- Any known costs that may be experienced by the District over the next five years

The following is a five-year average of the annual costs for the regional organization that will comply with the NPDES Phase II regulations:

**Table No. 2. Hamilton County Regional Storm Water Program Five-Year Cash Flow Analysis** (McKinley, S. (FMSM), Damico J. (ERC), and J. Rozelle (FMSM), 2001-2002. Hamilton County Storm Water Program Issue Papers No. 1-8).

	<b>5 Yr Ave.</b>
<b><i>Salaries and Fringe Benefits:</i></b>	
Salaries:	\$264,100
Fringe Benefits:	\$100,700
Total Salaries and Fringes * :	<u>\$364,800</u>
<b><i>Other Expenditures:</i></b>	
Rent:	\$76,500
Furnishings & Office Equipment:	\$21,200
Overhead:	\$12,700
Accounting Payroll/ General Fund Chg:	\$100,900
Supplies/Materials:	\$21,200
NPDES Phase II Permit Costs:	\$10,600
Public Education Outreach:	\$114,100
MSD Startup Cost Annual Payment:	\$204,000
Print Brochures:	\$10,000
Develop and Maintain Website:	\$6,000
Storm Drain Labeling:	\$10,000
Watershed Signage:	\$5,000
Hotline:	\$10,000
Household Septic System Mgmt:	\$30,000
Sensitive Areas Plan:	\$20,000
Pilot BMP Program:	\$30,000
Dry Weather Screening:	\$15,000
Mapping:	\$637,100
Total Other Expenditures * :	<u>\$1,334,300</u>
<b><i>Total Expenditures * :</i></b>	<u><b>\$1,699,100</b></u>
* rounded to the nearest \$100	

The final cost associated with the small organization and level of service using a five-year average as defined above, will be in the amount of \$1,699,100. This figure equates into approximately \$4.20 per parcel (per household) per year, which meets the financial goal of this regional group to not exceed an initial cost of \$5.00 per household per year for each individual ratepayer developed as part of the strategic planning process. It should be noted that inspection and maintenance issues are the responsibility of the local communities. There is an option for the inspection and maintenance as well as other activities to be added to the district in the future. This increase in level of service must also include an increase in cost of service and the storm water fee.

## Lower Costs Through Regional Cooperation

The National Association of Storm Water Management Agencies (NAFSMA) conducted a survey of communities required to obtain an NPDES Phase I permit (NAFSMA, 1999 "Survey of Storm Water Phase II Communities"). The survey determined that members had expended, on the average, \$ 650,000 per community for the permit application process alone. These costs are based on all Phase I communities complying with the regulations on their own.

Examples of several Phase I communities that have already initiated programs to comply with the NPDES Storm Water Regulations as follows:

**Table No. 3. Examples of Phase I Communities with NPDES Storm Water Regulation Compliance Programs** (NAFSMA - 1996. "Survey of Local Storm Water Utilities").

City	Annual Cost	Cost / Capita
Dayton OH	\$ 3.3 M	\$ 19.86
Louisville, KY	\$ 5.0 M	\$ 7.21
Akron, OH	\$ 5.0 M	\$ 23.04
Toledo, OH	\$ 3.2 M	\$ 10.20

USEPA estimates (based on the NAFSMA Study - "Survey of Storm Water Phase II Communities".) that the annual cost to administer the Phase II program will be cost \$1,525 per municipality for annual reporting and an additional \$9.16 per household per year for all other variable costs. Using this methodology, if all communities within Hamilton County comply individually and ignore a regional approach, it would cost approximately \$3,041,975 (\$74,725 annual reporting + \$2,967,250 variable costs) annually. This compares to the five-year average discussed above, where, if all of the communities join together and develop regionally, the costs to comply with the permit are estimated to in the amount of approximately \$1,699,100 annually, and \$4.20 per parcel (per household) per year. This equates into a cost reduction and economies of scale savings in the amount of approximately \$1,399,300 per year for the entire region and a cost savings to the individual ratepayer of approximately 44% per parcel (per household) per year when compared to the EPA cost of complying estimates. The cost savings assumes that the individual communities have at least minimal storm water programs for quantity and quality and that the local share of the program can be implemented with little or no additional cost. Within Hamilton County there are programs that meet and exceed these minimum requirements and those that do not meet these minimum requirements.

The cost savings can best be expressed using several examples. The first example that is already being implemented is the labeling or marking of storm water catch basins and inlets. If purchased in small numbers (> 20,000 markers) the cost is as much as \$10.00 for each marker. The Mill Creek Watershed Council (with the cooperation of the communities) through the regional efforts is able to purchase markers in large amounts at a little over \$2.00 per marker. The Regional District is planning to provide funding to groups like the Mill Creek Watershed Council to manage programs like the Storm Drain Marking effort.

The second example involves the development of the three ordinances that are required. It is estimated that the cost to develop one of these ordinances is approximately \$10,000, assuming only a moderate amount of

public input and revision. The cost of ordinance development for all 50 Hamilton County would be \$500,000 if each community did it on their own. Another way to look at this is, even if it costs twice as much (\$20,000) to develop an ordinance, the cost per community (if all fifty were to join the District) would be \$400 per community.

The last example is difficult to estimate cost savings at this time. The NPDES Phase II Permit requires all permitted communities to map their storm water system and outfalls. This is one of the most difficult and expensive portions of the permit. For many of the small villages, townships, and cities the development of a storm water map is out of the question, they cannot afford to prepare the map. Their only hope of complying with this part of the regulation is to share the cost of mapping with other communities through the regional district.

## Next Steps

**IV – Steering Committee Recommendations** ( McKinley, S. (FMSM), Damico J. (ERC), and J. Rozelle (FMSM), 2001-2002. Hamilton County Storm Water Program Issue Papers No. 1-8.)

The Steering Committee has developed the following recommendations to the Executive Committee:

- 1) A County-wide Storm Water District should be established to administer the NPDES Phase II Permit.
- 2) The District should initially be staffed with five FTE's including a Senior Storm Water Engineer, Engineer, Public Information Specialist, Planner and GIS Technician.
- 3) The BMP's proposed in the amended Implementation Plan Matrix, including the mapping component, should be used as the basis for the preparation of the Storm Water Management Plan (SWMP).
- 4) Consider implementing a two-tiered rate for mapping costs/requirements to be determined based on standards.
- 5) Initially, the goal should be to establish a storm water fee that does not exceed \$5.00 per household per year, excluding billing and collection costs.
- 6) For those local governments that wish to pass on the storm water fees to individual property owners, an agreement between the County and the local government should so state; and the costs of billing services and fee, *including the cost of collection*, will have to be added to the storm water fee.

## References

- 1) Hedeem, S., and the Rivers Unlimited Mill Creek Restoration Project, 1994. The Mill Creek – An Unnatural History of an Urban Stream.
- 2) McKinley, S. (FMSM), Damico J. (ERC), and J. Rozelle (FMSM), 2001-2002. Hamilton County Storm Water Program Issue Papers No. 1-8.

- 3) Mill Creek Watershed Council, Spring 2002. "Voice of the Mill Creek".
- 4) Mill Creek Watershed Council, Summer 2002. "Voice of the Mill Creek".
- 5) NAFSMA – The National Association of Flood and Stormwater Management Agencies, July 1999. "Survey of Stormwater Phase II Communities".
- 6) NAFSMA – The National Association of Flood and Stormwater Management Agencies, 1996. "Survey of Local Storm Water Utilities".